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THE STEGOCEPHALID AND AMPELISCID AMPHIPOD CRUSTACEANS OF NEWFOUNDLAND NOVA SCOTIA, AND NEW BRUNSWICK IN THE UNITED STATES NATIONAL MUSEUM

BY

CLARENCE R. SHOEMAKER
Assistant Curator, Division of Marine Invertebrates
United States National Museum

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THE STEGOCEPHALID AND AMPELISCID AMPHIPOD CRUSTACEANS OF NEWFOUNDLAND, NOVA SCOTIA, AND NEW BRUNSWICK IN THE UNITED STATES NATIONAL MUSEUM

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The Stegocephalidae are represented in the collection of the United States National Museum by three genera comprising four species. *Stegocephalus inflatus* has for many years been known from the coast of Labrador, the Gulf of St. Lawrence, and the New England coast, so that its occurrence in the region under discussion was to be expected. *Phippsiella similis*, described from the west coast of Norway, now appears for the first time in the Western Hemisphere. *Phippsiella minima* and *Andaniella pectinata* have been recorded from the west coast of Greenland, but not heretofore directly from the east coast of North America.

Three genera of the family Ampeliscidae, *Ampelisca*, *Byblis*, and *Haploops*, are represented in the amphipod fauna of this region. *Ampelisca macrocephala*, *A. eschrichtii*, *A. spinipes*, *Byblis gaimardii*, and *Haploops setosa* have all been recorded previously from the New England coast. *Ampelisca aequicornis*, *A. latipes*, *A. amblyops*, *A. gibba*, and *Haploops similis* are now recorded for the first time from the eastern coast of North America, and *Ampelisca typica* makes its initial appearance in the Western Hemisphere.

A form that superficially resembles *Haploops tubicola* and that has been mistaken for that species, I have described as a new species, *Haploops spinosa*. *H. tubicola* occurs in the Gulf of St. Lawrence, but I have not observed it among any of the material in the National Museum that was taken south of the gulf.

Family STEGOCEPHALIDAE

STEGOCEPHALUS INFLATUS Kröyer

1842. *Stegocephalus inflatus* Kröyer, Naturh. Tidsskr., vol. 4, p. 150.

1891. *Stegocephalus inflatus* G. O. Sars, Crustacea of Norway, vol. 1, p. 198, pl. 69.

Location 47 steamer *Speedwell*, SE. 1/2 S. from Cape Sable about 22 miles, August 21, 1877, 59 fathoms, pebbles and sand; 1 specimen.

Location 80 steamer *Speedwell*, Chebucto Light, N. 1/2 E. 9 miles, September 5, 1877, 57 fathoms, mud and pebbles; 1 specimen.

Station 2459 steamer *Albatross*, southeast of Newfoundland, 46° 23′ 00″ N., 52° 45′ 00″ W., July 2, 1885, 88 fathoms, coarse gray sand; 1 specimen.

Station 2466 steamer *Albatross*, 45° 29′ 00″ N., 55° 24′ 00″ W., July 3, 1885, 67 fathoms, coral; 8 specimens.

Station 2469 steamer *Albatross*, east of Nova Scotia, 44° 58′ 37″ N., 56° 20′ 45″ W., July 4, 1885, 201 fathoms, green mud; 1 specimen.

This species has been recorded frequently from the New England coast as far south as Block Island, and the *Challenger* took it south of Halifax in May, 1873.

PHIPPSIELLA SIMILIS (G. O. Sars)[1]

1891. *Stegocephalus similis* G. O. Sars, Crustacea of Norway, vol. 1, p. 200, pl. 70, fig. 1.
1924. *Phippsiella similis* Schellenberg, Mitteil. Zool. Museum in Berlin, Band 11, Heft 2, p. 200.
1925. *Phippsiella similis* Stephensen, Danish *Ingolf*-Expedition, vol. 3, pt. 9. Crust. Malacost. VI. Amphipoda. II. p. 131.

Station 2429 steamer *Albatross*, 42° 55′ 00″ N., 50° 51′ 00″ W., June 23, 1885, 471 fathoms, gray mud; 2 specimens.

This species was taken by the *Ingolf* in Davis Strait, making the first record for American waters. The present record extends the range very greatly southward.

PHIPPSIELLA MINIMA Stephensen

Figures 1, 2

1925. *Phippsiella minima* Stephensen, Danish *Ingolf*-Expedition, vol. 3, pt. 9. Crust. Malacost. VI. Amphipoda. II. p. 131, fig. 37.

Station 2466 steamer *Albatross*, south of Newfoundland, 45° 29′ 00″ N., 55° 24′ 00″ W., July 3, 1885, 67 fathoms, coral; 1 specimen.

This species bears a very striking superficial resemblance to *Phippsiella similis* (Sars) but upon close examination it is found to differ in important characters. The specimen that I have examined also differs somewhat in a few characters from the description and figures given by Stephensen, but this I believe to be due to the very immature condition of the specimens he had at his disposal.

The *Ingolf* Expedition took this species off western Greenland in latitude 64° 54′ N.; the present record, therefore, extends the range considerably to the south.

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[1] Schellenberg, *in* Bull. Mus. Comp. Zoöl., vol. 69, no. 9, pp. 196, 197, 1929, has given an excellent key to the genera of the Stegocephalidae, but the characters for the genera *Phippsiella* and *Stegocephalopsis* have been accidentally transposed.

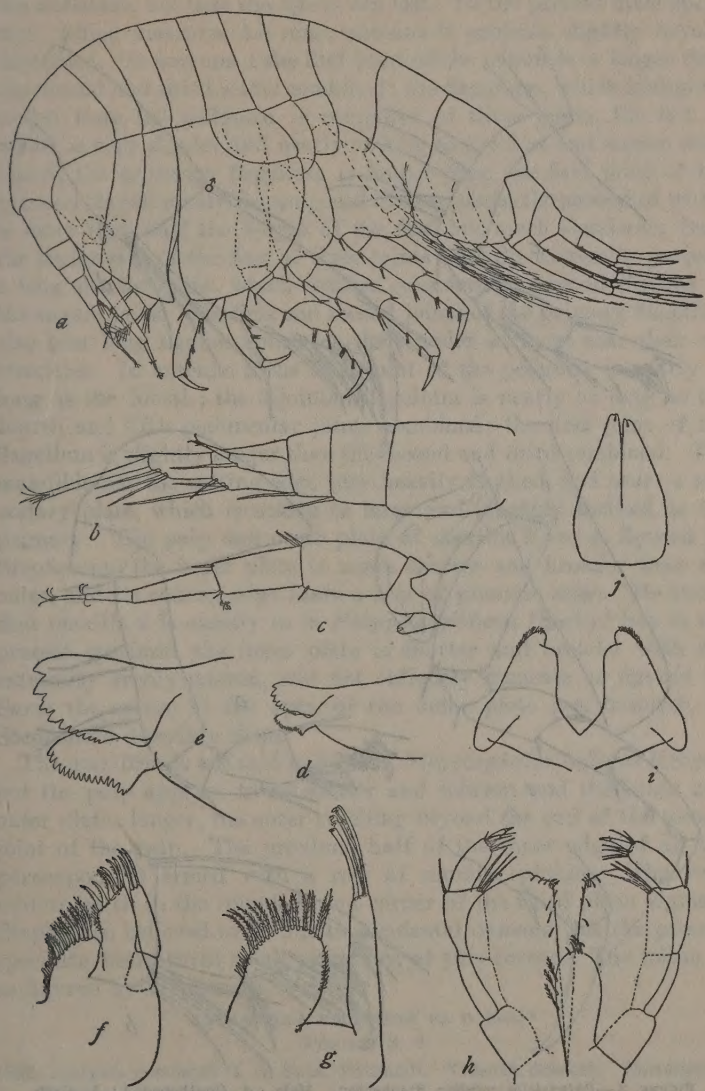

FIGURE 1.—*Phippsiella minima* Stephensen. Male. *a*, Entire animal; *b*, antenna 1; *c*, antenna 2; *d*, left mandible; *e*, primary and secondary cutting plates of mandible enlarged; *f*, maxilla 1; *g*, maxilla 2; *h*, maxillipeds; *i*, lower lip; *j*, telson

FIGURE 2.—*Phippsiella minima* Stephensen. Male. *a*, Gnathopod 1; *b*, sixth and seventh joints of gnathopod 1 enlarged; *c*, gnathopod 2; *d*, sixth and seventh joints of gnathopod 2 enlarged; *e*, peraeopod 1

Stephensen states that there are very few joints in the flagella of the antennae, but that the apices are lost. In the present male specimen, which measures 5.5 mm., antenna 2 projects slightly beyond antenna 1. In antenna 1 the first joint of the peduncle is longer than the second and third joints combined; the flagellum, which is slightly longer than the peduncle, is composed of three joints, the last of which is very slender and nearly as long as the first and second combined; the accessory flagellum is longer than the first joint of the primary flagellum and is composed of two joints, the second of which is more than half the length of the first but much slenderer; from the under side of the first of these joints near the extremity projects a long slender spine, which reaches considerably beyond the end of the second joint. The first and second joints of the primary flagellum also bear long slender spines on their under surfaces near their extremities. In antenna 2 the fifth joint of the peduncle is nearly as long as the fourth; the 3-jointed flagellum is nearly as long as the fourth and fifth peduncular joints combined; the first joint of the flagellum is slightly longer than the second and third combined. The mandible has the cutting edge very heavily toothed, and bears a secondary plate, which is nearly as large and strongly toothed as the primary. The palp and outer plate of maxilla 1 are as figured by Stephensen, the inner plate is much shorter and broader than the outer, and its convex edge bears a row of plumose setae. He states that maxilla 2 is exactly as in *Phippsia gibbosa* (Sars),[2] but in the present specimen the inner plate is shorter and broader with the extremity evenly convex, and not obliquely truncate as figured by Sars; the spines at the apex of the outer plate are, however, as Stephensen describes them.

The maxillipeds are said to be as in *Stegocephalus inflatus* Kröyer, but the palp appears to be stouter and shorter, and the inner and outer plates longer, the outer reaching beyond the end of the second joint of the palp. The proximal half of the inner edge of all the peraeopods is armed with a row of minute spinules. The very minute notch in the rounded hind corner of the third pleon segment Stephensen believed to be due to accidental damage, but the present specimen bears three small serrations at this corner. The telson is as figured by Stephensen.

ANDANIELLA PECTINATA (G. O. Sars)[3]

FIGURES 3, 4

1882. *Andania pectinata* G. O. SARS, Forhandl. Vidensk.-Selskab. Christiania, no. 18, p. 86, pl. 3, fig. 9a, b.

1891. *Andaniella pectinata* G. O. SARS, Crustacea of Norway, vol. 1, p. 211, pl. 72, fig. 3.

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[2] Crustacea of Norway, vol. 1, pl. 71, fig. 1, 1891.

[3] Schellenberg, in Bull. Mus. Comp. Zoöl., vol. 69, no. 9, p. 197, 1929, has in his key to the genera of the family Stegocephalidae accidentally transposed the characters for *Andaniopsis* and *Andaniella*.

1925. *Andaniella pectinata* STEPHENSEN, Danish *Ingolf*-Expedition, vol. 3, pt. 9. Crust. Malacost. VI. Amphipoda. II. p. 137.

Station 2466 steamer *Albatross*, south of Newfoundland, 45° 29′ 00″ N., 55° 24′ 00″ W., July 3, 1885, 67 fathoms, coral; 2 specimens, 1 ♂ and 1 ♀.

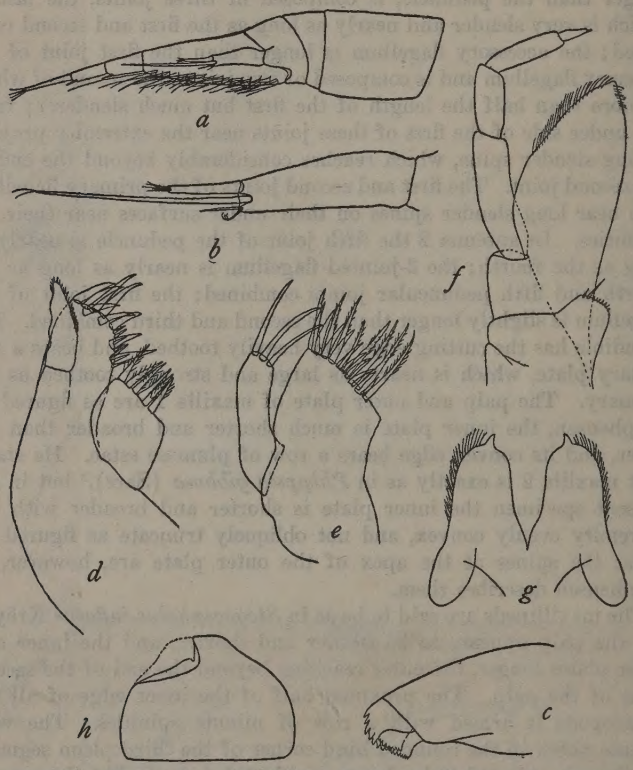

FIGURE 3.—*Andaniella pectinata* (G. O. Sars). *a*, Antenna 1; *b*, accessory flagellum of antenna 1 enlarged; *c*, mandible; *d*, maxilla 1; *e*, maxilla 2; *f*, maxilliped; *g*, lower lip; *h*, telson

The female measures 4 mm. in length, and the male a little less. These specimens constitute the first record of the occurrence of this species on the east coast of America. H. J. Hansen, however, has recorded it from the west coast of Greenland, in about latitude 68° N.

Though I have no doubt as to the identity of these specimens, they differ slightly in a few points from the description and figures given by Sars. He says of the first antenna: "Accessory appendage about

FIGURE 4.—*Andaniella pectinata* (G. O. Sars). *a*, Gnathopod 1; *b*, sixth and seventh joints of gnathopod 1 enlarged; *c*, gnathopod 2; *d*, sixth and seventh joints of gnathopod 2 enlarged; *e*, peraeopod 1; *f*, sixth and seventh joints of peraeopod 1 enlarged; *g*, peraeopod 2; *h*, peraeopod 3; *i*, peraeopod 4; *j*, peraeopod 5

half the length of the first joint of the flagellum." In the present specimens the accessory appendage is about two-thirds the length of the first joint of the flagellum, and bears a slender second joint, tipped with several short spinules, which is not quite half the length of the first joint. The first joint bears on its lower distal corner a long slender spine, which reaches to the middle of the second joint of the flagellum. The dactyl of the first and second peraeopods bears a stout tooth on the inner margin near the hinge. The inner plates of the maxillipeds are apparently shorter than those figured by Sars, not reaching to the base of the first joint of the palp.

Family AMPELISCIDAE

AMPELISCA MACROCEPHALA Lilljeborg

1852. *Ampelisca macrocephala* LILLJEBORG, Öfv. Vetensk.-Akad. Förh., vol. 9, p. 7.
1891. *Ampelisca macrocephala* G. O. SARS, Crustacea of Norway, vol. 1, p. 172, pl. 60, fig. 1.

Bay of Fundy, United States Fish Commission, 1872, no original number; 1 specimen.

Bay of Fundy, United States Fish Commission, 1872, original number 408; 8 specimens.

Seal Cove, Grand Manan, United States Fish Commission, 1872; 25 specimens.

Grand Manan, between High Duck and Long Island, August 23, 1898, 8 to 9 fathoms, collected by M. J. Rathbun; 3 specimens.

East of Grand Manan, United States Fish Commission, 1872, 60 fathoms, mud; 1 specimen.

Location 55 steamer *Speedwell*, mouth of Bedford Basin, north of Halifax, August 25, 1877, 33 fathoms, mud; 1 specimen.

Location 59 steamer *Speedwell*, Halifax outer harbor, ¼ mile SSW. Rock Head buoy, August 28, 1877, 25 fathoms, gravel; 2 specimens.

Location 72 steamer *Speedwell*, Sandwich Point (Halifax Harbor) W. ½ N. ⅓ mile, September 4, 1877, 18 fathoms, fine sand; 1 specimen.

Location 76 steamer *Speedwell*, Halifax Harbor, halfway between Litchfield and Mars Rocks, September 4, 1877, 18 fathoms, fine sand; 1 specimen.

Location 79 steamer *Speedwell*, off Chebucto Head (entrance of Halifax Harbor), September 5, 1877, 25 fathoms, rocks and millepore; 4 specimens.

Location 83 steamer *Speedwell*, Chebucto Light N. ½ E. 9 miles, September 5, 1877, 57 fathoms, coarse gravel and stones, bryozoa; 1 specimen.

Location 87 steamer *Speedwell*, mouth Halifax Harbor, Litchfield Rock NE. by E. ½ E. 1½ miles, Automatic buoy SE. ¾ S. 2¼

miles, dragging E. to 7 or 8 fathoms on Neverfail Shoal. September 11, 1877, very fine sand, stones, and algae; 3 specimens.

Location 95 steamer *Speedwell*, Halifax Harbor, off York Redoubt and Sandwich Point, September 13, 1877, very fine sand, ooze, and red algae; 6 specimens.

Location 97 steamer *Speedwell*, Halifax Harbor, midway between York Redoubt and McNabs Island Light, September 13, 1877, 16 fathoms; 3 specimens.

Location 98 steamer *Speedwell*, same locality as 97, September 15, 1877, 18 fathoms, mud and fine sand; 1 specimen.

Location 101 steamer *Speedwell*, off Halifax, Sambro Light, W. by N. ¼ N. 9 miles, September 15, 1877, 42 fathoms, fine sand with *Ophioglypha;* 3 specimens.

Location 109 steamer *Speedwell*, Bedford Basin, north of Halifax, September 21, 1877, 37 fathoms; 1 specimen.

Off Halifax, United States Fish Commission, 1877; 2 specimens.

Station 2458 steamer *Albatross*, southeast of Newfoundland, 46° 48′ 30″ N., 52° 34′ 00″ W., July 2, 1885, 89 fathoms, sand, green mud; 3 specimens.

Station 2461 steamer *Albatross*, south of Newfoundland, 45° 47′ 00″ N., 54° 13′ 30″ W., July 3, 1885, 59 fathoms, fine sand and black specks; 1 specimen.

Station 2491 steamer *Albatross*, east of Nova Scotia, 45° 24′ 30″ N., 58° 35′ 15″ W., July 6, 1885, 59 fathoms, white sand; 4 specimens.

Station 2497 steamer *Albatross*, east of Nova Scotia, 45° 04′ 00″ N., 59° 36′ 45″ W., July 6, 1885, 57 fathoms, yellow sand, broken shells, hard; 24 specimens.

Station 2520 steamer *Albatross*, south of Nova Scotia, 42° 41′ 00″ N., 64° 55′ 30″ W., July 12, 1885, 62 fathoms, rocky; 1 specimen.

Station 2701 steamer *Albatross*, south of Newfoundland, 44° 56′ 00″ N., 55° 49′ 30″ W., August 22, 1886, 75 fathoms, gray sand, black specks; 1 specimen.

Station 2703 steamer *Albatross*, east of Nova Scotia, 44° 01′ 00″ N., 59° 02′ 30″ W., August 23, 1886, 140 fathoms, gray sand and black specks; 5 specimens.

Ampelisca macrocephala is of rather common occurrence on the eastern coast of North America from Baffin Land to Jamaica Bay, Long Island.

AMPELISCA ESCHRICHTII Kröyer

1842. *Ampelisca eschrichtii* KRÖYER, Naturh. Tidsskr., vol. 4, p. 155.
1891. *Ampelisca eschrichti* G. O. SARS, Crustacea of Norway, vol. 1, p. 174, pl. 61, fig. 1.

Location 55 steamer *Speedwell*, mouth of Bedford Basin, north of Halifax, August 25, 1877, 33 fathoms, mud; 1 specimen.

Location 109 steamer *Speedwell*, Bedford Basin, north of Halifax, September 21, 1877, 37 fathoms; 1 specimen.

Station 2490 steamer *Albatross*, east of Nova Scotia, 45° 27′ 30″ N., 58° 27′ 45″ W., July 6, 1885, 50 fathoms, gravel and pebbles; 2 specimens.

Station 2497 steamer *Albatross*, east of Nova Scotia, 45° 04′ 00″ N., 59° 36′ 45″ W., July 6, 1885, 57 fathoms, yellow sand, broken shells, hard; 4 specimens.

Station 2703 steamer *Albatross*, east of Nova Scotia, 44° 01′ 00″ N., 59° 02′ 30″ W., August 23, 1886, 140 fathoms, gray sand, black specks; 1 specimen.

Upon the eastern coast of North America this species has heretofore been taken in Ungava Bay; Labrador; and the Gulf of St. Lawrence.

AMPELISCA AEQUICORNIS Bruzelius

1859. *Ampelisca aequicornis* R. M. Bruzelius, Kongl. Svenska Vetensk.-Akad. Handl., new ser. vol. 3, no. 1, p. 82, pl. 4, fig. 15.

1891. *Ampelisca aequicornis* G. O. Sars, Crustacea of Norway, vol. 1, p. 177, pl. 62, fig. 1.

Station 2481 steamer *Albatross*, east of Nova Scotia, 44° 07′ 30″ N., 57° 16′ 45″ W., July 5, 1885, 116 fathoms, gravel; 1 specimen.

Ampelisca aequicornis was taken by the *Ingolf* Expedition off the western coast of Greenland in latitude 65° N.; the present record, therefore, is the first directly from the eastern coast of North America, and also marks a southern extension of the range of this species.

AMPELISCA LATIPES Stephensen

1925. *Ampelisca latipes* K. Stephensen, Danish *Ingolf*-Expedition, vol. 3, pt. 9. Crust. Malacost. VI. Amphipoda. II. p. 142, fig. 42.

Station 2497 steamer *Albatross*, east of Nova Scotia, 45° 04′ 00″ N., 59° 36′ 45″ W., July 6, 1885, 57 fathoms, yellow sand, broken shells, hard; 1 specimen.

Ampelisca latipes was described by Doctor Stephensen from three specimens taken by the *Ingolf* Expedition off the western coast of Greenland in latitudes 63° and 66° N. The present record, therefore, extends the range of this species about 20° southward, and also marks its initial appearance on the eastern coast of North America.

AMPELISCA SPINIPES Boeck

1861. *Ampelisca spinipes* Boeck, Forhandl. Skandinav. Naturforsk., Möde 8, p. 653.

1891. *Ampelisca spinipes* G. O. Sars, Crustacea of Norway, vol. 1, p. 173, pl. 60, fig. 2.

Whiting River, Johnsons Bay, Bay of Fundy,[4] United States Fish Commission, 1872, 2 fathoms; 3 specimens.

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[4] Although this locality is in Maine, I have included it in this report, as it is a part of the same faunal area.

Ampelisca spinipes is a very abundant species in the vicinity of Woods Hole, Mass., but heretofore it has not been recorded from Nova Scotia.

AMPELISCA AMBLYOPS G. O. Sars

1891. *Ampelisca amblyops* G. O. Sars, Crustacea of Norway, vol. 1, p. 180, pl. 63, fig. 1.

1925. *Ampelisca amblyops* Stephensen, Danish *Ingolf*-Expedition, vol. 3, pt. 9. Crust. Malacost. VI. Amphipoda. II. p. 144, fig. 43.

Station 2481 steamer *Albatross*, east of Nova Scotia, 44° 07′ 30″ N., 57° 16′ 45″ W., July 5, 1885, 116 fathoms; 1 specimen.

This species was described by Sars from the western coast of Norway. Chevreux recorded it off Cape Finisterre, and Stephensen has recorded it from several localities off the western coast of Greenland. The present record is the first for the eastern coast of North America. Sars gives 8 mm. as the length of the female, and Stephensen's specimens measured between 5 and 7 mm. The present specimen is about 4 mm. in length.

AMPELISCA GIBBA G. O. Sars

1882. *Ampelisca gibba* G. O. Sars, Forhandl. Vidensk.-Selskab. Christiania No. 18, p. 107, pl. 6, fig. 1, 1a.

1891. *Ampelisca gibba* G. O. Sars, Crustacea of Norway, vol. 1, p. 171, pl. 59, fig. 2.

1925. *Ampelisca gibba* Stephensen, Danish *Ingolf*-Expedition, vol. 3, pt. 9. Crust. Malacost. VI. Amphipoda. II. p. 144.

Station 2481 steamer *Albatross*, east of Nova Scotia, 44° 07′ 30″ N., 57° 16′ 45″ W., July 5, 1885, 116 fathoms; 1 specimen.

Several specimens of this species were taken by the *Ingolf* Expedition off the western coast of Greenland, but it has not heretofore been recorded directly from the waters of the eastern coast of North America. The present specimen measures 7 mm. in length.

? AMPELISCA TYPICA (Bate)

1856. *Tetromatus typicus* Bate, Rep. 25 Meet. Brit. Assoc., p. 58, pl. 17, fig. 8, D 4.

1891. *Ampelisca typica* G. O. Sars, Crustacea of Norway, vol. 1, p. 165, pl. 57.

Ampelisca typica has not until now been recorded from the Western Hemisphere. Sars gives 10 mm. for the length of this species; the present specimen, however, measures only about 5 mm. and is presumably quite immature.

BYBLIS GAIMARDII (Kröyer)

1846. *Ampelisca gaimardii* Kröyer, Voy. Comm. Sci. Nord., Crust., pl. 23, fig. 1a–y.

1891. *Byblis gaimardi* G. O. Sars, Crustacea of Norway, vol. 1, p. 183, pl. 64.

Location 80 steamer *Speedwell*, Chebucto Light N. ½ E. 9 miles, September 5, 1877, 57 fathoms, mud and pebbles; 1 specimen.

Location 101 steamer *Speedwell*, off Halifax, Devils Island Light N. by W. ¾ W. 9½ miles, Sambro Light W. by N. ¼ N. 10¼ miles, September 15, 1877, 42 fathoms, shingle; 15 specimens.

Location 109 steamer *Speedwell*, Bedford Basin, north of Halifax, September 21, 1877, 37 fathoms; 1 specimen.

Location 112–118 steamer *Speedwell*, Chebucto Head Light, NW. by W. about 9 miles, September 24, 1877, 52 fathoms, fine sand and mud; 8 specimens.

Location 121 steamer *Speedwell*, Halifax outer harbor, September 27, 1877, 43 fathoms; 2 specimens.

Off Halifax, United States Fish Commission, 1877; 5 specimens.

Station 2458 steamer *Albatross*, southeast of Newfoundland, 46° 48′ 30″ N., 52° 34′ 00″ W., July 2, 1885, 89 fathoms, sand and green mud; 27 specimens.

Station 2466 steamer *Albatross*, south of Newfoundland, 45° 29′ 00″ N., 55° 24′ 00″ W., July 3, 1885, 67 fathoms, coral; 1 specimen.

Station 2491 steamer *Albatross*, east of Nova Scotia, 49° 24′ 30″ N., 58° 35′ 15″ W., July 6, 1885, 59 fathoms; 1 specimen.

Station 2497 steamer *Albatross*, east of Nova Scotia, 45° 04′ 00″ N., 59° 36′ 45″ W., July 6, 1885, 57 fathoms, yellow sand, broken shells, hard; 29 specimens.

Station 2703 steamer *Albatross*, east of Nova Scotia, 44° 01′ 00″ N., 59° 02′ 30″ W., August 23, 1886, 140 fathoms, gray sand, and black specks; 5 specimens.

Prof. S. I. Smith in 1872 recorded this species from the Bay of Fundy, and there are also in the United States National Museum collection specimens from Vineyard Sound, Mass., identified by him. On the eastern coast of North America this species has also been reported from Baffin Land; Labrador; and the Gulf of St. Lawrence.

HAPLOOPS SETOSA Boeck

1871. *Haploops setosa* Boeck, Forhandl. Vidensk-Selskab. Christiana, 1870, p. 228.
1891. *Haploops setosa* G. O. Sars, Crustacea of Norway, vol. 1, p. 194, pl. 68, fig. 1.

Bay of Fundy, United States Fish Commission, 1872, original number 328; 5 specimens. Original numbers 330 and 549; 8 specimens. No original number; 2 specimens.

Location 47 steamer *Speedwell*, SE. ½ S. from Cape Sable about 22 miles, August 21, 1877, 59 fathoms, pebbles and sand; 1 specimen.

Location 83 steamer *Speedwell*, Chebucto Light N. ½ E. 9 miles, September 5, 1877, 57 fathoms, mud and sand; 1 specimen.

Location 106–108 steamer *Speedwell*, 29½ miles S. from Chebucto Head, September 20, 1877, 110 fathoms, fine sand and mud; 2 specimens.

Station 2466 steamer *Albatross*, south of Newfoundland, 45° 29′ 00″ N., 55° 24′ 00″ W., July 3, 1885, 67 fathoms, coral; 1 specimen.

Station 2486 steamer *Albatross*, east of Nova Scotia, 44° 26′ 00″ N., 57° 11′ 15″ W., July 5, 1885, 190 fathoms, coarse sand and gravel; 1 specimen.

On the eastern coast of North America this species has been recorded from the Bay of Fundy and off Georges Bank, and there is in the National Museum collection a specimen taken by the steamer *Fish Hawk* off the mouth of Delaware Bay (39° 48′ 30″ N., 70° 54′ 00″ W.). Prof. S. J. Holmes has reported it from the *Albatross* station 2055, 40° 32′ 00″ N., 68° 17′ 00″ W. The specimen from location 83, off Halifax, measures 21 mm.

Doctor Stephensen[5] says: "Some specimens from the Bay of Fundy, determined by S. I. Smith as the present species, probably belong to *H. tubicola*." I have very carefully examined all the specimens in the National Museum identified by S. I. Smith as *H. setosa* and find that they are unquestionably *H. setosa*. I believe that *H. robusta* is but a large form of *H. setosa*, but have hesitated to place it in synonymy for want of authentic specimens of *H. robusta* with which to compare my material. A. M. Norman[6] says:

> I have received specimens under this name [*H. setosa*] from S. I. Smith, which were taken in the Bay of Fundy, N. E. America. I am inclined, however, to think that they should be referred to *H. robusta*, G. O. Sars. They are the largest examples I have seen, and in most points, such as the form of the cephalon and of the third segment of the metasome, they agree with Sars's species; but the proportionate lengths of the joints of the peduncles of the two pairs of antennae are different.

HAPLOOPS SPINOSA, new species

FIGURES 5, 6

Bay of Fundy, United States Fish Commission, 1872, original number 549; 2 specimens.

Whiting River, Johnsons Bay, Bay of Fundy,[7] United States Fish Commission, 1872, 12 fathoms, rocky; 3 specimens.

Off Grand Manan, United States Fish Commission, 1872, 97 to 106 fathoms; 1 specimen.

Location 63–66 steamer *Speedwell*, Bedford Basin, north of Halifax, ¼ across harbor from Navy Island, August 29, 1877, 26 fathoms; 1 specimen.

Location 83 steamer *Speedwell*, Chebucto Light N. ½ E. 9 miles, September 5, 1877, 57 fathoms, mud and sand; 1 specimen.

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[5] Danish *Ingolf*-Expedition, vol. 3, pt. 9, Crust. Malacost. VI. Amphipoda. II, p. 154, 1925.

[6] Ann. Mag. Nat. Hist., ser. 7, vol. 5, no. 28, p. 346, 1900.

[7] Although this locality is in Maine, I have included it in this report, as it is a part of the same faunal area.

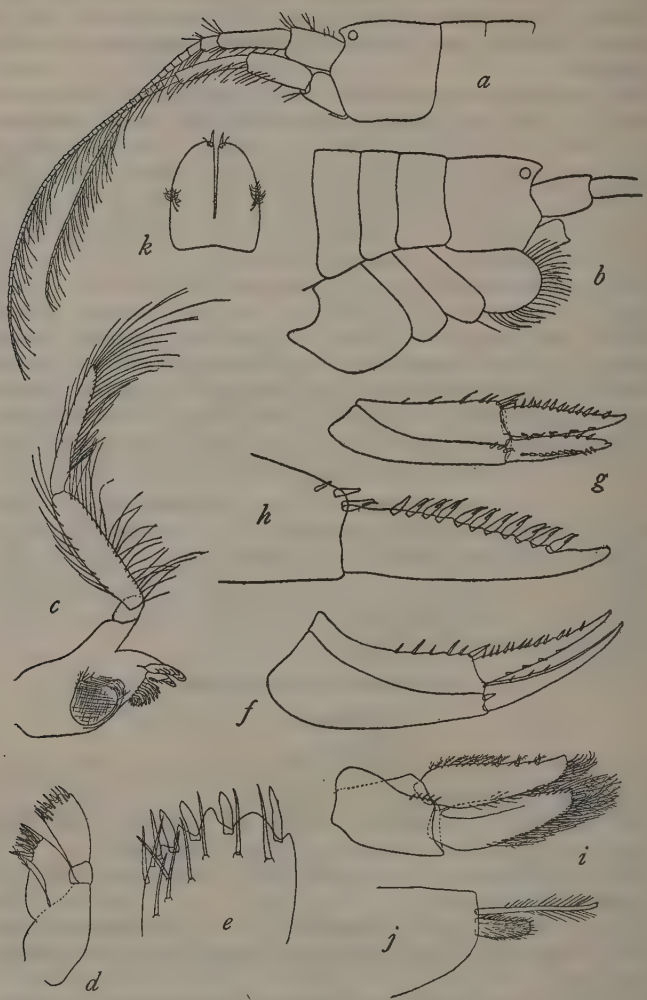

FIGURE 5.—*Haploops spinosa*, new species. Female. *a*, Head and antennae; *b*, head and first four side plates; *c*, mandible; *d*, maxilla 1; *e*, end of palp of maxilla 1 enlarged; *f*, uropod 1; *g*, uropod 2; *h*, outer ramus of uropod 2 enlarged; *i*, uropod 3; *j*, end of outer ramus of uropod 3 enlarged, showing the short blunt spine; *k*, telson

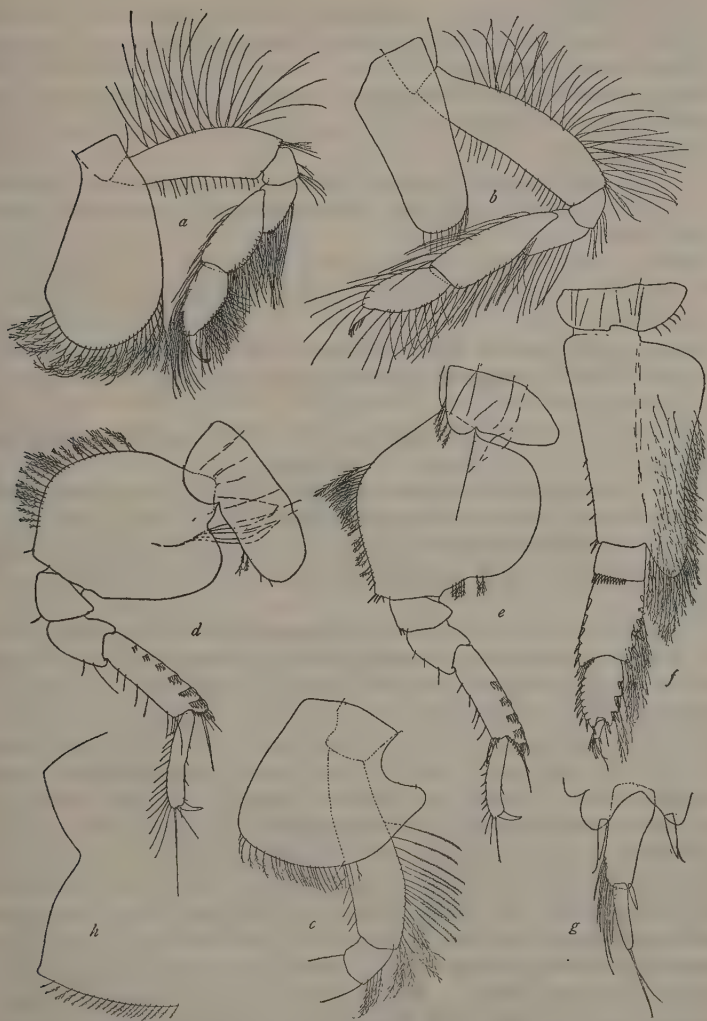

FIGURE 6.—*Haploops spinosa*, new species. Female. *a*, Gnathopod 1; *b*, gnathopod 2; *c*, peraeopod 2 and side plate 4; *d*, peraeopod 3; *e*, peraeopod 4; *f*, peraeopod 5; *g*, sixth and seventh joints of peraeopod 5 enlarged; *h*, pleon segment 3

Location 106–108 steamer *Speedwell*, about 29¾ miles S. from Chebucto Head, September 20, 1877, 110 fathoms, fine sand and mud; 3 specimens.

Station 2497 steamer *Albatross*, east of Nova Scotia, 45° 04′ 00″ N., 59° 36′ 45″ W., July 6, 1885, 57 fathoms, yellow sand, broken shells, hard; 1 specimen.

Station 2499 steamer *Albatross*, southeast of Nova Scotia 44° 46′ 30″ N., 59° 55′ 45″ W., July 6, 1885, 130 fathoms, black mud; 2 specimens.

Station 2504 steamer *Albatross*, east of Nova Scotia, 44° 23′ 00″ N., 61° 22′ 45″ W., July 7, 1885, 82 fathoms, black mud and gravel; 1 specimen.

Station 2511 steamer *Albatross*, off Halifax, Nova Scotia, 44° 05′ 30″ N., 63° 31′ 30″ W., July 11, 1885, 84 fathoms, brown mud; 1 specimen.

Station 2705 steamer *Albatross*, south of Nova Scotia, 42° 47′ 00″ N., 61° 04′ 00″ W., August 24, 1886, 1,255 fathoms, light brown ooze; 1 specimen.

Lockeport, Nova Scotia, September 21, 1927, taken from haddock stomach by A. W. H. Needler; 1 specimen.

In the National Museum collection are a number of specimens that had been identified as *Haploops tubicola*, but upon close examination several characters become apparent that do not agree with that species and that appear important enough for the founding of a new species.

The relative lengths of the first and second antennae are about as in *H. tubicola*, and the second antenna is a little more than one-third the length of the entire animal. The first joint of the peduncle of the first antenna is much stouter than is usual in the genus *Haploops*. In large specimens there are about 30 joints in the flagellum of the first antenna, and 50 in that of the second. The top of the head is produced only slightly forward, the lateral angles are rounding, and the lower lateral margin is straight. The single pair of eyes is located as in *H. tubicola*. The mouth parts are as figured by Sars for *H. tubicola*[8] except that the palp of the first maxilla is distally broader. The outer plate is armed with 11 serrate spine teeth, and the palp bears 7 marginal spines on distal edge. Side plates 1 to 3 are like those of *H. tubicola*, except that 2 and 3 are not so rounding distally. Side plate 4 is deeper with the lower margin more convex, and the posterior lobe broad and evenly rounded, not acutely pointed as in *H. tubicola*. Peraeopods 1 and 2 as in *H. tubicola*. Peraeopods 3 and 4 as in *H. tubicola*, except that the hind margin of the second joints is much more strongly lobed.

[8] Crustacea of Norway, vol. 1, pl. 67, 1891.

Peraeopod 5 proportionally much as in *H. tubicola*, but the arrangement of spines and setae is different; both the hind margin and inner surface of the posterior lobe of the second joint are thickly set with long plumose setae, the lower margin of the third joint bears a row of short, stout spines, the fourth joint bears in addition to the stout lateral spines a short row of stout spines on the lower margin, the fifth joint is broader and the lateral spines longer and stouter than in *H. tubicola*, the sixth joint bears a row of long slender spines on lower distal half of front margin, the seventh joint is two-thirds the length of the sixth and bears two long, slender terminal spines. The lower lateral margin of pleon segment 3 slightly convex, the lower angle very little produced, and the lower margin slightly convex and fringed with plumose setae. Uropod 2 projecting backward slightly beyond 1, but much less than 3. The peduncle of uropod 1 is a little longer than the rami, the outer of which is slightly longer than the inner. The relative proportion of these rami is somewhat variable, in some specimens the inner ramus is very nearly as long as the outer, while in others it is decidedly shorter. The outer edge of the peduncle of uropod 1 is without spines except for a single terminal one, but the inner edge bears spines on the distal half; the outer ramus bears three spines on the proximal half of the inner edge, but none on the outer edge; the inner ramus bears many spines on inner edge and four on proximal half of outer edge. In uropod 2 the outer ramus is shorter than the inner and bears on the outer edge a row of closely set stout spines, each of which bears a setule near the apex, the inner edge bears a more sparsely set row of spines; in the inner ramus the arrangement of spines is reversed, the inner edge bearing the closely set row and the outer the sparsely set row. Uropod 3 has the rami equal in length, foliaceous, and very bluntly rounded terminally; the outer ramus bears a closely set row of plumose setae on the outer and inner edges and the distal extremity, and this extremity also bears a short, stout, blunt spine, which is clothed with short setules; the inner ramus bears a closely set row of plumose setae on the distal half of the inner margin and the distal extremity, the inner margin bears three short stout spines on the distal half and a row of short plumose setae on proximal half. The telson is much like that of *H. tubicola* except that there are two plumose setules near the center of the lateral margins.

Length of the largest specimen is about 19 mm.

Type.—U.S.N.M. No. 62831.

Locality.—Location 106–8, steamer *Speedwell*, 44° 01′ N., 63° 20′ W., about 29¾ miles S. from Chebucto Head, September 20, 1877, 110 fathoms, fine sand and mud.

The specimens that I have had the opportunity of examining are apparently all females, and the dorsal process of the fourth pleon segment is just as shown by Sars for the female of *H. tubicola*. The specific name *spinosa* is given in reference to the rows of strong spines on the rami of the second uropods. Stebbing[9] figures the second uropod of *H. laevis* as having a row of spines on the outer ramus, but those of the inner ramus are not nearly so numerous or conspicuous as in the present species.

HAPLOOPS SIMILIS Stephensen

1925. *Haploops similis* K. STEPHENSEN, Danish *Ingolf*-Expedition, vol. 3, pt. 9. Crust. Malacost. VI. Amphipoda. II. p. 156, fig. 46.

Station 2491 steamer *Albatross*, east of Nova Scotia, 45° 24′ 30″ N., 58° 35′ 15″ W., July 6, 1885, 59 fathoms, white sand; 2 specimens.

Station 2497 steamer *Albatross*, east of Nova Scotia, 45° 04′ 00″ N., 59° 36′ 45″ W., July 6, 1885, 57 fathoms, yellow sand, broken shells, hard; 3 specimens.

Station 2499 steamer *Albatross*, southeast of Nova Scotia, 44° 46′ 30″ N., 59° 55′ 45″ W., July 6, 1885, 130 fathoms, black mud; 4 specimens.

This species was described by Doctor Stephensen from a single specimen taken off the western coast of Greenland by the *Ingolf* Expedition. His specimen measured 4.5 mm., while the present ones are from 3 to 4 mm.; they appear, however, to agree very well with the figures he has given.

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[9] Bijdragen tot de Dierkunde, vol. 17, pl. 3, uropod 2, 1894.

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[illegible]

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